

SEQUENCE LISTING

<110> Prayaga, Sudhirdas K.
Majumder, Kumud
Taillon, Bruce E.
Spaderna, Steven K.
Spytek, Kimberly A.
MacDougall, John

<120> NOVEL POLYPEPTIDES AND NUCLEIC ACIDS ENCODING SAME

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<140> 09/755,665

<141> 2001-01-04

<150> U.S.S.N. 60/174,724

<151> 2000-01-06

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<170> PatentIn Ver. 2.1

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cac tac tta agt cca agt cga gaa ttc aga gag tac aaa tgt gat gtc      198
His Tyr Leu Ser Pro Ser Arg Glu Phe Arg Glu Tyr Lys Cys Asp Val
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ctc atg aga gaa aat gaa gct ctg aaa gac aag agc tct cac atg ttt      246
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 aag tac tca agt gtc acc agg aga att cca aaa ata gct aca cag aga 390
 Lys Tyr Ser Ser Val Thr Arg Arg Ile Pro Lys Ile Ala Thr Gln Arg
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 Ala Gly Ala Ser Thr Thr Leu Asn Ser Ile Val Ala Trp Thr Gly Met
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 ttg ata gca tag aagacctaaa gatggtagaa cctatcggca actagaaagt 490
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Ala Leu Leu Cys Ile Leu Cys Arg Leu Leu Val His Ser Lys Asp Val
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tcc tgg aga gaa ttc atg acc ctg cac tat tta gat cca agc caa gat 147
Ser Trp Arg Glu Phe Met Thr Leu His Tyr Leu Asp Pro Ser Gln Asp
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Phe Glu Glu Tyr Lys Cys Asp Val Leu Met Arg Glu Lys Glu Ala Leu
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aaa cgc aag agc tct cat atg tcc atc tat agc tta tgg cac aaa atg 243
Lys Arg Lys Ser Ser His Met Ser Ile Tyr Ser Leu Trp His Lys Met
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His Tyr Leu Ser Pro Ser Arg Glu Phe Arg Glu Tyr Lys Cys Asp Val	
40 45 50	
ctc atg aga gaa aat gaa gct ctg aaa gac aag agc tct cac atg ttt	247
Leu Met Arg Glu Asn Glu Ala Leu Lys Asp Lys Ser Ser His Met Phe	
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Ile Tyr Ile Ser Trp Tyr Lys Ile Glu His Ile Cys Thr Ser Asp Asn	
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acc atc gcc gag ggc ccg tcc cca acc agc gag ggc gcc tcc gag gca 154

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Thr	His	Tyr	Ser	Val	Gln	Ser	Val	Ile	Trp	Ser	Met	Asp	Leu	Ser	Leu		

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Val	Glu	Leu	Ala	Ile	Glu	Arg	Tyr	Pro	Ile	Pro	Pro	Pro	Asp	Ala	Lys					
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Pro	Thr	Glu	Arg	Ala	Asp	Leu	Lys	Met	Leu	Thr	Asn	His	Ala	Phe	Ile					
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Leu	Leu	Thr	Val	Leu	Gly	Ser	Ser	Thr	Asn	Gly	Gln	Thr	Lys	Arg	Asn	
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Tyr Val Lys Ser Thr Phe Val Leu His Pro Arg Asn Ile His Asn Leu	
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Cys Leu Asp Pro Asp Ala Pro Arg Ile Asn Lys Ile Val Gln Lys Met	
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Cys Gln Cys Met Arg Thr His Phe Ile Pro Leu His Pro Lys Phe Ile	
35 40 45	
aaa gaa ctc aga att att cag gta ctt tca aaa gtt ctt agt tat ttt	192
Lys Glu Leu Arg Ile Ile Gln Val Leu Ser Lys Val Leu Ser Tyr Phe	
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65 70 75 80	
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 <213> Homo sapiens

<400> 12
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1 5 10 15
Leu Ser Val Ala Leu Cys Glu Val Pro Ser Ile Ser Thr Val Pro Gln
20 25 30
Cys Gln Cys Met Arg Thr His Phe Ile Pro Leu His Pro Lys Phe Ile
35 40 45
Lys Glu Leu Arg Ile Ile Gln Val Leu Ser Lys Val Leu Ser Tyr Phe
50 55 60
Ala Ser Val His Val Asp Cys Leu Gly Ala Glu Ser Thr Met Val Asn
65 70 75 80
Arg Thr Ala Lys Lys Lys Asn Ser Val Phe Thr Asn Asn Leu Val Leu
85 90 95
Thr Ser Gly

<210> 13
 <211> 1245
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1245)

<400> 13

atg aac ccc aca cta ggc ctg gcc att ttt ctg gct gtt ctc ctc acg	48
Met Asn Pro Thr Leu Gly Leu Ala Ile Phe Leu Ala Val Leu Leu Thr	
1 5 10 15	
gtg aaa ggt ctt cta aag ccg agc ttc tca cca agg aat tat aaa gct	96
Val Lys Gly Leu Leu Lys Pro Ser Phe Ser Pro Arg Asn Tyr Lys Ala	
20 25 30	
ttg agc gag gtc caa gga tgg aag caa agg atg gca gcc aag gag ctt	144
Leu Ser Glu Val Gln Gly Trp Lys Gln Arg Met Ala Ala Lys Glu Leu	
35 40 45	
gca agg cag aac atg gac tta ggc ttt aag ctg ctc aag aag ctg gcc	192
Ala Arg Gln Asn Met Asp Leu Gly Phe Lys Leu Leu Lys Lys Leu Ala	
50 55 60	
ttt tac aac cct ggc agg aac atc ttc cta tcc ccc ttg agc atc tct	240
Phe Tyr Asn Pro Gly Arg Asn Ile Phe Leu Ser Pro Leu Ser Ile Ser	
65 70 75 80	
aca gct ttc tcc atg ctg tgc ctg ggt gcc cag gac agc acc ctg gac	288
Thr Ala Phe Ser Met Leu Cys Leu Gly Ala Gln Asp Ser Thr Leu Asp	
85 90 95	
gag atc aag cag ggg ttc aac ttc aga aag atg cca gaa aaa gat ctt	336
Glu Ile Lys Gln Gly Phe Asn Phe Arg Lys Met Pro Glu Lys Asp Leu	
100 105 110	
cat gag ggc ttc cat tac atc atc cac gag ctg acc cag aag acc cag	384
His Glu Gly Phe His Tyr Ile Ile His Glu Leu Thr Gln Lys Thr Gln	
115 120 125	
gac ctc aaa ctg agc att ggg aac acg ctg ttc att gac cag agg ctg	432
Asp Leu Lys Leu Ser Ile Gly Asn Thr Leu Phe Ile Asp Gln Arg Leu	
130 135 140	
cag cca cag cgt aag ttt ttg gaa gat gcc aag aac ttt tac agt gcc	480
Gln Pro Gln Arg Lys Phe Leu Glu Asp Ala Lys Asn Phe Tyr Ser Ala	
145 150 155 160	
gaa acc atc ctt acc aac ttt cag aat ttg gaa atg gct cag aag cag	528
Glu Thr Ile Leu Thr Asn Phe Gln Asn Leu Glu Met Ala Gln Lys Gln	
165 170 175	
atc aat gac ttt atc agt caa aaa acc cat ggg aaa att aac aac ctg	576
Ile Asn Asp Phe Ile Ser Gln Lys Thr His Gly Lys Ile Asn Asn Leu	
180 185 190	
atc gag aat ata gac ccc ggc act gtg atg ctt ctt gca aat tat att	624
Ile Glu Asn Ile Asp Pro Gly Thr Val Met Leu Leu Ala Asn Tyr Ile	
195 200 205	
ttc ttt cga gcc agg tgg aaa cat gag ttt gat cca aat gta act aaa	672
Phe Phe Arg Ala Arg Trp Lys His Glu Phe Asp Pro Asn Val Thr Lys	
210 215 220	

gag gaa gat ttc ttt ctg gag aaa aac agt tca gtc aag gtg ccc atg	720
Glu Glu Asp Phe Phe Leu Glu Lys Asn Ser Ser Val Lys Val Pro Met	
225 230 235 240	
atg ttc cgt agt ggc ata tac caa gtt ggc tat gac gat aag ctc tct	768
Met Phe Arg Ser Gly Ile Tyr Gln Val Gly Tyr Asp Asp Lys Leu Ser	
245 250 255	
tgc acc atc ctg gaa ata ccc tac cag aaa aat atc aca gcc atc ttc	816
Cys Thr Ile Leu Glu Ile Pro Tyr Gln Lys Asn Ile Thr Ala Ile Phe	
260 265 270	
atc ctt cct gat gag ggc aag ctg aag cac ttg gag aag gga ttg cag	864
Ile Leu Pro Asp Glu Gly Lys Leu Lys His Leu Glu Lys Gly Leu Gln	
275 280 285	
gtg gac act ttc tcc aga tgg aaa aca tta ctg tca cgc agg gtc gta	912
Val Asp Thr Phe Ser Arg Trp Lys Thr Leu Leu Ser Arg Arg Val Val	
290 295 300	
gac gtg tct gta ccc aga ctc cac atg acg ggc acc ttc gac ctg aag	960
Asp Val Ser Val Pro Arg Leu His Met Thr Gly Thr Phe Asp Leu Lys	
305 310 315 320	
aag act ctc tcc tac ata ggt gtc tcc aaa atc ttt gag gaa cat ggt	1008
Lys Thr Leu Ser Tyr Ile Gly Val Ser Lys Ile Phe Glu Glu His Gly	
325 330 335	
gat ctc acc aag atc gcc cct cat cgc agc ctg aaa gtg ggc gag gct	1056
Asp Leu Thr Lys Ile Ala Pro His Arg Ser Leu Lys Val Gly Glu Ala	
340 345 350	
gtg cac aag gct gag ctg aag atg gat gag agg ggt acg gaa ggg gcc	1104
Val His Lys Ala Glu Leu Lys Met Asp Glu Arg Gly Thr Glu Gly Ala	
355 360 365	
gct ggc acc gga gca cag act ctg ccc atg gag aca cca ctc gtc gtc	1152
Ala Gly Thr Gly Ala Gln Thr Leu Pro Met Glu Thr Pro Leu Val Val	
370 375 380	
aag ata gac aaa ccc tat ctg ctg ctg att tac agc gag aaa ata cct	1200
Lys Ile Asp Lys Pro Tyr Leu Leu Leu Ile Tyr Ser Glu Lys Ile Pro	
385 390 395 400	
tcc gtg ctc ttc ctg gga aag att gtt aac cct att gga aaa taa	1245
Ser Val Leu Phe Leu Gly Lys Ile Val Asn Pro Ile Gly Lys	
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<210> 14

<211> 414

<212> PRT

<213> Homo sapiens

<400> 14

Met Asn Pro Thr Leu Gly Leu Ala Ile Phe Leu Ala Val Leu Leu Thr
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			20					25					30				
Leu	Ser	Glu	Val	Gln	Gly	Trp	Lys	Gln	Arg	Met	Ala	Ala	Lys	Glu	Leu		
		35					40					45					
Ala	Arg	Gln	Asn	Met	Asp	Leu	Gly	Phe	Lys	Leu	Leu	Lys	Lys	Leu	Ala		
	50					55					60						
Phe	Tyr	Asn	Pro	Gly	Arg	Asn	Ile	Phe	Leu	Ser	Pro	Leu	Ser	Ile	Ser		
	65				70					75				80			
Thr	Ala	Phe	Ser	Met	Leu	Cys	Leu	Gly	Ala	Gln	Asp	Ser	Thr	Leu	Asp		
			85					90					95				
Glu	Ile	Lys	Gln	Gly	Phe	Asn	Phe	Arg	Lys	Met	Pro	Glu	Lys	Asp	Leu		
			100					105					110				
His	Glu	Gly	Phe	His	Tyr	Ile	Ile	His	Glu	Leu	Thr	Gln	Lys	Thr	Gln		
		115				120						125					
Asp	Leu	Lys	Leu	Ser	Ile	Gly	Asn	Thr	Leu	Phe	Ile	Asp	Gln	Arg	Leu		
	130					135					140						
Gln	Pro	Gln	Arg	Lys	Phe	Leu	Glu	Asp	Ala	Lys	Asn	Phe	Tyr	Ser	Ala		
	145				150					155					160		
Glu	Thr	Ile	Leu	Thr	Asn	Phe	Gln	Asn	Leu	Glu	Met	Ala	Gln	Lys	Gln		
			165					170					175				
Ile	Asn	Asp	Phe	Ile	Ser	Gln	Lys	Thr	His	Gly	Lys	Ile	Asn	Asn	Leu		
		180						185					190				
Ile	Glu	Asn	Ile	Asp	Pro	Gly	Thr	Val	Met	Leu	Leu	Ala	Asn	Tyr	Ile		
	195					200						205					
Phe	Phe	Arg	Ala	Arg	Trp	Lys	His	Glu	Phe	Asp	Pro	Asn	Val	Thr	Lys		
	210				215					220							
Glu	Glu	Asp	Phe	Phe	Leu	Glu	Lys	Asn	Ser	Ser	Val	Lys	Val	Pro	Met		
					230					235					240		
Met	Phe	Arg	Ser	Gly	Ile	Tyr	Gln	Val	Gly	Tyr	Asp	Asp	Lys	Leu	Ser		
			245						250					255			
Cys	Thr	Ile	Leu	Glu	Ile	Pro	Tyr	Gln	Lys	Asn	Ile	Thr	Ala	Ile	Phe		
			260					265					270				
Ile	Leu	Pro	Asp	Glu	Gly	Lys	Leu	Lys	His	Leu	Glu	Lys	Gly	Leu	Gln		
		275					280					285					
Val	Asp	Thr	Phe	Ser	Arg	Trp	Lys	Thr	Leu	Leu	Ser	Arg	Arg	Val	Val		
	290					295					300						
Asp	Val	Ser	Val	Pro	Arg	Leu	His	Met	Thr	Gly	Thr	Phe	Asp	Leu	Lys		
	305				310					315				320			
Lys	Thr	Leu	Ser	Tyr	Ile	Gly	Val	Ser	Lys	Ile	Phe	Glu	Glu	His	Gly		
			325						330					335			
Asp	Leu	Thr	Lys	Ile	Ala	Pro	His	Arg	Ser	Leu	Lys	Val	Gly	Glu	Ala		
			340					345					350				
Val	His	Lys	Ala	Glu	Leu	Lys	Met	Asp	Glu	Arg	Gly	Thr	Glu	Gly	Ala		
		355					360					365					
Ala	Gly	Thr	Gly	Ala	Gln	Thr	Leu	Pro	Met	Glu	Thr	Pro	Leu	Val	Val		
	370					375					380						
Lys	Ile	Asp	Lys	Pro	Tyr	Leu	Leu	Leu	Ile	Tyr	Ser	Glu	Lys	Ile	Pro		
	385				390					395					400		
Ser	Val	Leu	Phe	Leu	Gly	Lys	Ile	Val	Asn	Pro	Ile	Gly	Lys				
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<211> 1123

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (9)..(1118)

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Met Leu Ala Arg Arg Lys Pro Met Leu Pro Ala Leu Thr Ile

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5

10

aac cct acc atc gcc gag ggc ccg tcc cca acc agc gag ggc gcc tcc 98

Asn Pro Thr Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser

15

20

25

30

gag gca aac ctg gtg gac ctg cag aag aag ctg gag gag ctg gaa ctt 146

Glu Ala Asn Leu Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu

35

40

45

gac gag cag cag aag ccg ctg gaa gcc ttt ctc acc cag aaa gcc aag 194

Asp Glu Gln Gln Lys Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys

50

55

60

gtc ggc gaa ctc aaa gac gat gac ttc gaa agg acc tca gag ctg gac 242

Val Gly Glu Leu Lys Asp Asp Asp Phe Glu Arg Thr Ser Glu Leu Asp

65

70

75

gcg ggc aac ggc ggg gtg gtc acc aaa gtc cag cac aga ccc tcg ggc 290

Ala Gly Asn Gly Gly Val Val Thr Lys Val Gln His Arg Pro Ser Gly

80

85

90

ctc atc atg gcc agg aag ctg atc cac ctt gag atc aag ccg gcc atc 338

Leu Ile Met Ala Arg Lys Leu Ile His Leu Glu Ile Lys Pro Ala Ile

95

100

105

110

cgg aac cag atc atc cgc gag cac cag gtc ctg cac gag tgc aac tca 386

Arg Asn Gln Ile Ile Arg Glu His Gln Val Leu His Glu Cys Asn Ser

115

120

125

ccg tac atc gtg ggc ttc tac ggg gcc ttc tac tgt gac agg gag atc 434

Pro Tyr Ile Val Gly Phe Tyr Gly Ala Phe Tyr Cys Asp Arg Glu Ile

130

135

140

agc atc tgc atg gag cac atg gat ggc ggc tcc ctg gac cag ggg ctg 482

Ser Ile Cys Met Glu His Met Asp Gly Gly Ser Leu Asp Gln Gly Leu

145

150

155

aaa gag gcc aag agg att ccc gag gac atc ctg ggg aaa gtc agc att 530

Lys Glu Ala Lys Arg Ile Pro Glu Asp Ile Leu Gly Lys Val Ser Ile

160

165

170

gcg gtt ctc ccg ggc ttg gcg tac ctc cga gag aag cac cag atc atg 578

Ala Val Leu Arg Gly Leu Ala Tyr Leu Arg Glu Lys His Gln Ile Met

175

180

185

190

cac cga aat gtg aag ccc tcc aac atc ctc gtg aac tct aga ggg gag 626

His Arg Asn Val Lys Pro Ser Asn Ile Leu Val Asn Ser Arg Gly Glu

195

200

205

atc aag ctg tgt gac ttc ggg gtg agc ggc cag ctc atc gac tcc atg	674
Ile Lys Leu Cys Asp Phe Gly Val Ser Gly Gln Leu Ile Asp Ser Met	
210 215 220	
gcc aac tcc ttc gtg ggc acg cgc tcc tac atg gct ccg gag cgg ttg	722
Ala Asn Ser Phe Val Gly Thr Arg Ser Tyr Met Ala Pro Glu Arg Leu	
225 230 235	
cag ggc aca cat tac tcg gtg cag tcg gtc atc tgg agc atg gac ctg	770
Gln Gly Thr His Tyr Ser Val Gln Ser Val Ile Trp Ser Met Asp Leu	
240 245 250	
tcc ctg gtg gag ctg gcc atc gaa agg tac ccc atc ccc ccg ccc gac	818
Ser Leu Val Glu Leu Ala Ile Glu Arg Tyr Pro Ile Pro Pro Pro Asp	
255 260 265 270	
gcc aag gag ctg gag gcc atc ttt ggc cag ccc gtg gtc gac agg gaa	866
Ala Lys Glu Leu Glu Ala Ile Phe Gly Gln Pro Val Val Asp Arg Glu	
275 280 285	
gaa gga gag cct cac agc atc tcc tct tgg cca ggg tcc ccc ggg cgc	914
Glu Gly Glu Pro His Ser Ile Ser Ser Trp Pro Gly Ser Pro Gly Arg	
290 295 300	
ccc aac agc ggt tac ggg atg gac agc ctg ccc gcc atg gcc atc ttc	962
Pro Asn Ser Gly Tyr Gly Met Asp Ser Leu Pro Ala Met Ala Ile Phe	
305 310 315	
gaa ctg ctg gac tat att gtg aaa gag ccg cct cct aag ctg ccc aac	1010
Glu Leu Leu Asp Tyr Ile Val Lys Glu Pro Pro Pro Lys Leu Pro Asn	
320 325 330	
ggg gtg ttc acc ccc gac ttc cag gag ttt gtc aat aaa tgc ctc atc	1058
Gly Val Phe Thr Pro Asp Phe Gln Glu Phe Val Asn Lys Cys Leu Ile	
335 340 345 350	
aaa aac cca acg gag cgg gcg gac cta aag atg ctc agt gag gtc att	1106
Lys Asn Pro Thr Glu Arg Ala Asp Leu Lys Met Leu Ser Glu Val Ile	
355 360 365	
cca tgt ata tga atata	1123
Pro Cys Ile	
370	

<210> 16
 <211> 369
 <212> PRT
 <213> Homo sapiens

<400> 16
 Met Leu Ala Arg Arg Lys Pro Met Leu Pro Ala Leu Thr Ile Asn Pro
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 Thr Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala
 20 25 30
 Asn Leu Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu

acagagagca ggagcttcaa ctacattgaa ttccattgta gcatggacgg gtatgttgat 420
 agcatagaag acctaaagat ggtagaacct atcgggaact agaaagtcta tgcacatcct 480
 caggtattgg tagagtattc agtgctttct aagtagcagc ccctgcctcc atcaat 536

<210> 18
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 18
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 actttgcatc ctatgcacac tgcttgtaga gagcaaagaa gtttcttggg gagaattcat 120
 gaaacagcac tacttaagtc caagtcgaga attcagagag tacaaatgtg atgtcctcat 180
 gagagaaaat gaagctctga aagacaagag ctctcacatg tttatctata tctcatggta 240
 caaaatcgag catatatgca ctagtgcaca ctggatggat cgcttccgaa atgcatatgt 300
 atgggtccag aatcctctca aagtactcaa gtgtcaccag gagaattcca aaaatagcta 360
 cacagagagc aggagcttca actacattga attccattgt agcatggacg ggtatgttga 420
 tagcatagaa gacctaaaga tggtagaacc tatcggcaac tagaaagtct atgcacatcc 480
 tcaggtattg gtagagtatt cagtgtcttc taagtagcag ccctgcctcc catcaat 537

<210> 19
 <211> 249
 <212> DNA
 <213> Homo sapiens

<400> 19
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 caaaaatagc tacacagaga gcaggagctt caactacatt gaattccatt gtagcatgga 120
 cgggtatggt gatagcatag aagacctaaa gatggtagaa cctatcggca actagaaagt 180
 ctatgcacat cctcaggtat tggtagagta ttcagtgtct tctaagtagc agcccctgcc 240
 tccatcaat 249

<210> 20
 <211> 250
 <212> DNA
 <213> Homo sapiens

<400> 20
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 acaacaatag gtacacagag agcagaagct tcagctacat tgaattccat tgtggcgtag 120
 atggatatgt tgataacata gaagacctga ggattataga acctatcagc aactagaaag 180
 tctatgcaca tcctcagata ttggtagagt attcagtgtc tccaaagtgg tgggccctgc 240
 ctccatcaat 250

<210> 21
 <211> 419
 <212> DNA
 <213> Homo sapiens

<400> 21
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 tctttgcagg ctacttgtag acagcaagga cgtttcctgg agagaattca tgaccctgca 120
 ctatttagat ccaagccaag attttgaaga gtacaaatgt gatgtcctca tgagagaaaa 180

agaagctctg aaacgcaaga gctctcatat gtccatctat agcttatggc acaaaatgga 240
gtgtatatgc attattgaaa tgggaataac cgatatagat atgcctatgt atggggccag 300
ggtgccctca aagtactcga gtgtcagtgg cagaagtact gcaatagcta cacagagatc 360
ttcaactaca ttgaattcca ctgtggcaag gatgggtatg ttgatagcat agaagacct 419

<210> 22
<211> 426
<212> DNA
<213> Homo sapiens

<400> 22
ggtgactgag atgacatcct ctctaaagat ttggggcata ctcttgcccc tgctttgcat 60
cctttgcagg ctgtgtgtat acagtaacaa catttactgg agagaattca taaaacttca 120
ttacttaagt ccaagtcgag aattcaaaga gtacaaatgt gatgtcctca tgagagaaaa 180
agaggctctg aaaggcaaga gctttcatat gttcatctat agcttatggg tcaaaattca 240
gcgtgcatgc atcaatgaga aggggagcga ccgatataga aatgcatatg tatgggcccc 300
aggtgccctc aaagtactcg agtgtcactg ggagaagtac aacaataggc acacagagag 360
cagaagcttc agctacattg aattccattg tggcgtagat ggatatgttg ataacataga 420
agacct 426

<210> 23
<211> 256
<212> DNA
<213> Homo sapiens

<400> 23
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tgcattcttt gcaggctact tgtacacagc aaggacgttt cctggagaga attcatgacc 120
ctgcactatt tagatccaag ccaagatfff gaagagtaca aatgtgatgt cctcatgaga 180
gaaaaagaag ctctgaaacg caagagctct catatgtcca tctatagctt atggcacaaa 240
atggagtgtg tatgca 256

<210> 24
<211> 256
<212> DNA
<213> Homo sapiens

<400> 24
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tgcattctat gcacactgct tgtacagagc aaagaagttt cttggagaga attcatgaaa 120
cagcactact taagtccaag tgcagaattc agagagtaca aatgtgatgt cctcatgaga 180
gaaaatgaag ctctgaaaga caagagctct cacatgttta tctatatctc atggtacaaa 240
atcgagcata tatgca 256

<210> 25
<211> 61
<212> DNA
<213> Homo sapiens

<400> 25
cttcaactac attgaattcc actgtggcaa ggatgggtat gttgatagca tagaagacct 60
a 61

<210> 26
 <211> 61
 <212> DNA
 <213> Homo sapiens

<400> 26
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 a 61

<210> 27
 <211> 126
 <212> PRT
 <213> Homo sapiens

<400> 27
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 Ile Leu Cys Arg Leu Leu Val His Ser Lys Asp Val Ser Trp Arg Glu
 20 25 30
 Phe Met Thr Leu His Tyr Leu Asp Pro Ser Gln Asp Phe Glu Glu Tyr
 35 40 45
 Lys Cys Asp Val Leu Met Arg Glu Lys Glu Ala Leu Lys Arg Lys Ser
 50 55 60
 Ser His Met Ser Ile Tyr Ser Leu Trp His Lys Met Glu Cys Ile Cys
 65 70 75 80
 Ile Ile Glu Met Gly Ile Thr Asp Ile Asp Met Pro Met Tyr Gly Pro
 85 90 95
 Arg Val Pro Ser Lys Tyr Ser Ser Val Ser Gly Arg Ser Thr Ala Ile
 100 105 110
 Ala Thr Gln Arg Ser Ser Thr Thr Leu Asn Ser Thr Val Ala
 115 120 125

<210> 28
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 28
 Met Thr Ser Ser Leu Lys Ile Trp Gly Ile Leu Leu Ala Leu Leu Cys
 1 5 10 15
 Ile Leu Cys Arg Leu Cys Val Tyr Ser Asn Asn Ile Tyr Trp Arg Glu
 20 25 30
 Phe Ile Lys Leu His Tyr Leu Ser Pro Ser Arg Glu Phe Lys Glu Tyr
 35 40 45

Lys Cys Asp Val Leu Met Arg Glu Lys Glu Ala Leu Lys Gly Lys Ser
 50 55 60
 Phe His Thr Phe Ile Tyr Ser Leu Trp Phe Lys Ile Gln Arg Ala Cys
 65 70 75 80
 Ile Asn Glu Lys Gly Ser Asp Arg Tyr Arg Asn Ala Tyr Val Trp Pro
 85 90 95
 Gln Val Pro Ser Asn Tyr Ser Ser Val Thr Gly Arg Ser Thr Thr Ile
 100 105 110
 Gly Thr Gln Arg Ala Glu Ala Ser Ala Thr Leu Asn Ser Ile Val Ala
 115 120 125

<210> 29
 <211> 147
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (1)..(147)
 <223> Wherein Xaa is any amino acid as defined in the
 specification

<400> 29
 Met Ala Ser Ser Leu Lys Ile Trp Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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 Xaa Xaa Xaa Xaa Xaa Xaa Val Gln Ser Lys Glu Val Ser Trp Arg Glu
 20 25 30
 Phe Met Lys Gln His Tyr Leu Ser Pro Ser Arg Glu Phe Arg Glu Tyr
 35 40 45
 Lys Cys Asp Val Leu Met Arg Glu Asn Glu Ala Leu Lys Asp Lys Ser
 50 55 60
 Ser His Met Phe Ile Tyr Ile Ser Trp Tyr Lys Ile Glu His Ile Cys
 65 70 75 80
 Thr Ser Asp Asn Trp Met Asp Arg Phe Arg Asn Ala Tyr Val Trp Val
 85 90 95
 Gln Asn Pro Leu Lys Val Leu Lys Cys His Gln Glu Asn Ser Lys Asn
 100 105 110
 Ser Tyr Thr Glu Ser Arg Ser Phe Asn Tyr Ile Glu Phe His Cys Ser
 115 120 125
 Met Asp Gly Tyr Val Asp Ser Ile Glu Asp Leu Lys Met Val Glu Pro
 130 135 140

Ile Gly Asn
145

<210> 30
<211> 147
<212> PRT
<213> Homo sapiens

<400> 30
Met Ala Ser Ser Leu Lys Ile Trp Gly Thr Leu Leu Ala Leu Leu Cys
1 5 10 15
Ile Leu Cys Thr Leu Leu Val Gln Ser Lys Glu Val Ser Trp Arg Glu
20 25 30
Phe Met Lys Gln His Tyr Leu Ser Pro Ser Arg Glu Phe Arg Glu Tyr
35 40 45
Lys Cys Asp Val Leu Met Arg Glu Asn Glu Ala Leu Lys Asp Lys Ser
50 55 60
Ser His Met Phe Ile Tyr Ile Ser Trp Tyr Lys Ile Glu His Ile Cys
65 70 75 80
Thr Ser Asp Asn Trp Met Asp Arg Phe Arg Asn Ala Tyr Val Trp Val
85 90 95
Gln Asn Pro Leu Lys Val Leu Lys Cys His Gln Glu Asn Ser Lys Asn
100 105 110
Ser Tyr Thr Glu Ser Arg Ser Phe Asn Tyr Ile Glu Phe His Cys Ser
115 120 125
Met Asp Gly Tyr Val Asp Ser Ile Glu Asp Leu Lys Met Val Glu Pro
130 135 140
Ile Gly Asn
145

<210> 31
<211> 147
<212> PRT
<213> Homo sapiens

<220>
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<222> (1)..(147)
<223> Wherein Xaa is any amino acid as defined in the
specification

<400> 31
Met Ala Ser Ser Leu Lys Ile Trp Gly Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Val Gln Ser Lys Glu Val Ser Trp Arg Glu
 20 25 30
 Phe Met Lys Gln His Tyr Leu Ser Pro Ser Arg Glu Phe Arg Glu Tyr
 35 40 45
 Lys Cys Asp Val Leu Met Arg Glu Asn Glu Ala Leu Lys Asp Lys Ser
 50 55 60
 Ser His Met Phe Ile Tyr Ile Ser Trp Tyr Lys Ile Glu His Ile Cys
 65 70 75 80
 Thr Ser Asp Asn Trp Met Asp Arg Phe Arg Asn Ala Tyr Val Trp Val
 85 90 95
 Gln Asn Pro Leu Lys Val Leu Lys Cys His Gln Glu Asn Ser Lys Asn
 100 105 110
 Ser Tyr Thr Glu Ser Arg Ser Phe Asn Tyr Ile Glu Phe His Cys Ser
 115 120 125
 Met Asp Gly Tyr Val Asp Ser Ile Glu Asp Leu Lys Met Val Glu Pro
 130 135 140
 Ile Gly Asn
 145

<210> 32
 <211> 147
 <212> PRT
 <213> Homo sapiens

<400> 32
 Met Thr Ser Ser Leu Lys Ile Trp Gly Ile Leu Leu Ala Leu Leu Cys
 1 5 10 15
 Ile Leu Cys Arg Leu Cys Val Tyr Ser Asn Asn Ile Tyr Trp Arg Glu
 20 25 30
 Phe Ile Lys Leu His Tyr Leu Ser Pro Ser Arg Glu Phe Lys Glu Tyr
 35 40 45
 Lys Cys Asp Val Leu Met Arg Glu Lys Glu Ala Leu Lys Gly Lys Ser
 50 55 60
 Phe His Met Phe Ile Tyr Ser Leu Trp Phe Lys Ile Gln Arg Ala Cys
 65 70 75 80
 Ile Asn Glu Lys Gly Ser Asp Arg Tyr Arg Asn Ala Tyr Val Trp Ala
 85 90 95
 Pro Gly Ala Leu Lys Val Leu Glu Cys His Trp Glu Lys Tyr Asn Asn
 100 105 110
 Arg Tyr Thr Glu Ser Arg Ser Phe Ser Tyr Ile Glu Phe His Cys Gly
 115 120 125

Val Asp Gly Tyr Val Asp Asn Ile Glu Asp Leu Arg Ile Ile Glu Pro
 130 135 140

Ile Ser Asn
 145

<210> 33
 <211> 394
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> (1)..(394)
 <223> Wherein Xaa is any amino acid as defined in the
 specification

<400> 33
 Met Leu Ala Arg Arg Lys Pro Met Leu Pro Ala Leu Thr Ile Asn Pro
 1 5 10 15

Thr Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala
 20 25 30

Asn Leu Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu
 35 40 45

Gln Gln Lys Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly
 50 55 60

Glu Leu Lys Asp Asp Asp Phe Glu Arg Thr Ser Glu Leu Asp Ala Gly
 65 70 75 80

Asn Gly Gly Val Val Thr Lys Val Gln His Arg Pro Ser Gly Leu Ile
 85 90 95

Met Ala Arg Lys Leu Ile His Leu Glu Ile Lys Pro Ala Ile Arg Asn
 100 105 110

Gln Ile Ile Arg Glu His Gln Val Leu His Glu Cys Asn Ser Pro Tyr
 115 120 125

Ile Val Gly Phe Tyr Gly Ala Phe Tyr Cys Asp Arg Glu Ile Ser Ile
 130 135 140

Cys Met Glu His Met Asp Gly Gly Ser Leu Asp Gln Gly Leu Lys Glu
 145 150 155 160

Ala Lys Arg Ile Pro Glu Asp Ile Leu Gly Lys Val Ser Ile Ala Val
 165 170 175

Leu Arg Gly Leu Ala Tyr Leu Arg Glu Lys His Gln Ile Met His Arg
 180 185 190

Asn Val Lys Pro Ser Asn Ile Leu Val Asn Ser Arg Gly Glu Ile Lys

195	200	205
Leu Cys Asp Phe Gly Val	Ser Gly Gln Leu Ile	Asp Ser Met Ala Asn
210	215	220
Ser Phe Val Gly Thr Arg	Ser Tyr Met Ala Pro	Glu Arg Leu Gln Gly
225	230	235 240
Thr His Tyr Ser Val Gln	Ser Val Ile Trp Ser	Met Asp Leu Ser Leu
245	250	255
Val Glu Leu Ala Ile Glu	Arg Tyr Pro Ile Pro	Pro Pro Asp Ala Lys
260	265	270
Glu Leu Glu Ala Ile Phe	Gly Gln Pro Val Val	Asp Arg Glu Glu Gly
275	280	285
Glu Pro His Ser Ile Ser	Ser Trp Pro Gly Ser	Pro Gly Arg Pro Asn
290	295	300
Ser Gly Tyr Gly Met Asp	Ser Leu Pro Ala Met	Ala Ile Phe Glu Leu
305	310	315 320
Leu Asp Tyr Ile Val Lys	Glu Pro Pro Pro Lys	Leu Pro Asn Gly Val
325	330	335
Phe Thr Pro Glu Phe Gln	Glu Phe Val Asn Lys	Cys Leu Ile Lys Asn
340	345	350
Pro Thr Glu Arg Ala Asp	Leu Lys Met Leu Thr	Asn His Ala Phe Ile
355	360	365
Lys Arg Ser Glu Val Lys	Glu Ala Asp Phe Ala	Cys Leu Cys Lys Thr
370	375	380
Leu Xaa Ala Glu Pro Ser	Pro Ala His Pro	
385	390	

<210> 34
 <211> 395
 <212> PRT
 <213> Homo sapiens

<400> 34
 Met Leu Ala Arg Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro
 1 5 10 15
 Thr Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala
 20 25 30
 Asn Leu Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu
 35 40 45
 Gln Gln Lys Lys Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val
 50 55 60

Gly	Glu	Leu	Lys	Asp	Asp	Asp	Phe	Glu	Arg	Ile	Ser	Glu	Leu	Gly	Ala	65	70	75	80
Gly	Asn	Gly	Gly	Val	Val	Thr	Lys	Val	Gln	His	Arg	Pro	Ser	Gly	Leu	85	90	95	
Ile	Met	Ala	Arg	Lys	Leu	Ile	His	Leu	Glu	Ile	Lys	Pro	Ala	Ile	Arg	100	105	110	
Asn	Gln	Ile	Ile	Arg	Glu	Leu	Gln	Val	Leu	His	Glu	Cys	Asn	Ser	Pro	115	120	125	
Tyr	Ile	Val	Gly	Phe	Tyr	Gly	Ala	Phe	Tyr	Ser	Asp	Gly	Glu	Ile	Ser	130	135	140	
Ile	Cys	Met	Glu	His	Met	Asp	Gly	Gly	Ser	Leu	Asp	Gln	Val	Leu	Lys	145	150	155	160
Glu	Ala	Lys	Arg	Ile	Pro	Glu	Glu	Ile	Leu	Gly	Lys	Val	Ser	Ile	Ala	165	170	175	
Val	Leu	Arg	Gly	Leu	Ala	Tyr	Leu	Arg	Glu	Lys	His	Gln	Ile	Met	His	180	185	190	
Arg	Asp	Val	Lys	Pro	Ser	Asn	Ile	Leu	Val	Asn	Ser	Arg	Gly	Glu	Ile	195	200	205	
Lys	Leu	Cys	Asp	Phe	Gly	Val	Ser	Gly	Gln	Leu	Ile	Asp	Ser	Met	Ala	210	215	220	
Asn	Ser	Phe	Val	Gly	Thr	Arg	Ser	Tyr	Met	Ala	Pro	Glu	Arg	Leu	Gln	225	230	235	240
Gly	Thr	His	Tyr	Ser	Val	Gln	Ser	Asp	Ile	Trp	Ser	Met	Gly	Leu	Ser	245	250	255	
Leu	Val	Glu	Leu	Ala	Val	Gly	Arg	Tyr	Pro	Ile	Pro	Pro	Pro	Asp	Ala	260	265	270	
Lys	Glu	Leu	Glu	Ala	Ile	Phe	Gly	Arg	Pro	Val	Val	Asp	Gly	Glu	Glu	275	280	285	
Gly	Glu	Pro	His	Ser	Ile	Ser	Pro	Arg	Pro	Arg	Pro	Pro	Gly	Arg	Pro	290	295	300	
Val	Ser	Gly	His	Gly	Met	Asp	Ser	Arg	Pro	Ala	Met	Ala	Ile	Phe	Glu	305	310	315	320
Leu	Leu	Asp	Tyr	Ile	Val	Asn	Glu	Pro	Pro	Pro	Lys	Leu	Pro	Asn	Gly	325	330	335	
Val	Phe	Thr	Pro	Asp	Phe	Gln	Glu	Phe	Val	Asn	Lys	Cys	Leu	Ile	Lys	340	345	350	
Asn	Pro	Ala	Glu	Arg	Ala	Asp	Leu	Lys	Met	Leu	Thr	Asn	His	Thr	Phe	355	360	365	

Ile Lys Arg Ser Glu Val Glu Glu Val Asp Phe Ala Gly Trp Leu Cys
 370 375 380

Lys Thr Leu Arg Leu Asn Gln Pro Gly Thr Pro
 385 390 395

<210> 35

<211> 392

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> (1)..(392)

<223> Wherein Xaa is any amino acid as defined in the
 specification

<400> 35

Leu Ala Arg Arg Lys Pro Met Leu Pro Ala Leu Thr Ile Asn Pro Thr
 1 5 10 15

Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn
 20 25 30

Leu Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln
 35 40 45

Gln Lys Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu
 50 55 60

Leu Lys Asp Asp Asp Phe Glu Arg Thr Ser Glu Leu Asp Ala Gly Asn
 65 70 75 80

Gly Gly Val Val Thr Lys Val Gln His Arg Pro Ser Gly Leu Ile Met
 85 90 95

Ala Arg Lys Leu Ile His Leu Glu Ile Lys Pro Ala Ile Arg Asn Gln
 100 105 110

Ile Ile Arg Glu His Gln Val Leu His Glu Cys Asn Ser Pro Tyr Ile
 115 120 125

Val Gly Phe Tyr Gly Ala Phe Tyr Cys Asp Arg Glu Ile Ser Ile Cys
 130 135 140

Met Glu His Met Asp Gly Gly Ser Leu Asp Gln Gly Leu Lys Glu Ala
 145 150 155 160

Lys Arg Ile Pro Glu Asp Ile Leu Gly Lys Val Ser Ile Ala Val Leu
 165 170 175

Arg Gly Leu Ala Tyr Leu Arg Glu Lys His Gln Ile Met His Arg Asn
 180 185 190

Val Lys Pro Ser Asn Ile Leu Val Asn Ser Arg Gly Glu Ile Lys Leu
 195 200 205

Cys Asp Phe Gly Val Ser Gly Gln Leu Ile Asp Ser Met Ala Asn Ser
 210 215 220

Phe Val Gly Thr Arg Ser Tyr Met Ala Pro Glu Arg Leu Gln Gly Thr
 225 230 235 240

His Tyr Ser Val Gln Ser Val Ile Trp Ser Met Asp Leu Ser Leu Val
 245 250 255

Glu Leu Ala Ile Glu Arg Tyr Pro Ile Pro Pro Pro Asp Ala Lys Glu
 260 265 270

Leu Glu Ala Ile Phe Gly Gln Pro Val Val Asp Arg Glu Glu Gly Glu
 275 280 285

Pro His Ser Ile Ser Ser Trp Pro Gly Ser Pro Gly Arg Pro Asn Ser
 290 295 300

Gly Tyr Gly Met Asp Ser Leu Pro Ala Met Ala Ile Phe Glu Leu Leu
 305 310 315 320

Asp Tyr Ile Val Lys Glu Pro Pro Pro Lys Leu Pro Asn Gly Val Phe
 325 330 335

Thr Pro Glu Phe Gln Glu Phe Val Asn Lys Cys Leu Ile Lys Asn Pro
 340 345 350

Thr Glu Arg Ala Asp Leu Lys Met Leu Thr Asn His Ala Phe Ile Lys
 355 360 365

Arg Ser Glu Val Lys Glu Ala Asp Phe Ala Cys Leu Cys Lys Thr Leu
 370 375 380

Xaa Ala Glu Pro Ser Pro Ala His
 385 390

<210> 36
 <211> 389
 <212> PRT
 <213> Homo sapiens

<400> 36
 Met Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp
 1 5 10 15

Gly Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala
 20 25 30

Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys
 35 40 45

Arg Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys
 50 55 60

Asp Asp Asp Phe Glu Lys Ile Ser Glu Leu Gly Ala Gly Asn Gly Gly

65		70		75		80
Val Val Phe Lys Val Ser His Lys Pro Ser Gly Leu Val Met Ala Arg						
	85			90		95
Lys Leu Ile His Leu Glu Ile Lys Pro Ala Ile Arg Asn Gln Ile Ile						
	100			105		110
Arg Glu Leu Gln Val Leu His Glu Cys Asn Ser Pro Tyr Ile Val Gly						
	115			120		125
Phe Tyr Gly Ala Phe Tyr Ser Asp Gly Glu Ile Ser Ile Cys Met Glu						
	130			135		140
His Met Asp Gly Gly Ser Leu Asp Gln Val Leu Lys Lys Ala Gly Arg						
	145			150		155
Ile Pro Glu Gln Ile Leu Gly Lys Val Ser Ile Ala Val Ile Lys Gly						
	165			170		175
Leu Thr Tyr Leu Arg Glu Lys His Lys Ile Met His Arg Asp Val Lys						
	180			185		190
Pro Ser Asn Ile Leu Val Asn Ser Arg Gly Glu Ile Lys Leu Cys Asp						
	195			200		205
Phe Gly Val Ser Gly Gln Leu Ile Asp Ser Met Ala Asn Ser Phe Val						
	210			215		220
Gly Thr Arg Ser Tyr Met Ser Pro Glu Arg Leu Gln Gly Thr His Tyr						
	225			230		235
Ser Val Gln Ser Asp Ile Trp Ser Met Gly Leu Ser Leu Val Glu Met						
	245			250		255
Ala Val Gly Arg Tyr Pro Ile Pro Pro Pro Asp Ala Lys Glu Leu Glu						
	260			265		270
Leu Met Phe Gly Cys Gln Val Glu Gly Asp Ala Ala Glu Thr Pro Pro						
	275			280		285
Arg Pro Arg Thr Pro Gly Arg Pro Leu Ser Ser Tyr Gly Met Asp Ser						
	290			295		300
Arg Pro Pro Met Ala Ile Phe Glu Leu Leu Asp Tyr Ile Val Asn Glu						
	305			310		315
Pro Pro Pro Lys Leu Pro Ser Gly Val Phe Ser Leu Glu Phe Gln Asp						
	325			330		335
Phe Val Asn Lys Cys Leu Ile Lys Asn Pro Ala Glu Arg Ala Asp Leu						
	340			345		350
Lys Gln Leu Met Val His Ala Phe Ile Lys Arg Ser Asp Ala Glu Glu						
	355			360		365
Val Asp Phe Ala Gly Trp Leu Cys Ser Thr Ile Gly Leu Asn Gln Pro						

370

375

380

Ser Thr Pro Thr His

385

<210> 37

<211> 224

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> (1)..(224)

<223> Wherein Xaa is any amino acid as defined in the
specification

<400> 37

Gly	Lys	Val	Ser	Ile	Ala	Val	Leu	Arg	Gly	Leu	Ala	Tyr	Leu	Arg	Glu
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Lys	His	Gln	Ile	Met	His	Arg	Asn	Val	Lys	Pro	Ser	Asn	Ile	Leu	Val
		20					25						30		

Asn	Ser	Arg	Gly	Glu	Ile	Lys	Leu	Cys	Asp	Phe	Gly	Val	Ser	Gly	Gln
		35					40					45			

Leu	Ile	Asp	Ser	Met	Ala	Asn	Ser	Phe	Val	Gly	Thr	Arg	Ser	Tyr	Met
	50					55					60				

Ala	Pro	Glu	Arg	Leu	Gln	Gly	Thr	His	Tyr	Ser	Val	Gln	Ser	Val	Ile
65					70					75					80

Trp	Ser	Met	Asp	Leu	Ser	Leu	Val	Glu	Leu	Ala	Ile	Glu	Arg	Tyr	Pro
		85							90					95	

Ile	Pro	Pro	Pro	Asp	Ala	Lys	Glu	Leu	Glu	Ala	Ile	Phe	Gly	Gln	Pro
		100						105					110		

Val	Val	Asp	Arg	Glu	Glu	Gly	Glu	Pro	His	Ser	Ile	Ser	Ser	Trp	Pro
		115					120					125			

Gly	Ser	Pro	Gly	Arg	Pro	Asn	Ser	Gly	Tyr	Gly	Met	Asp	Ser	Leu	Pro
		130				135					140				

Ala	Met	Ala	Ile	Phe	Glu	Leu	Leu	Asp	Tyr	Ile	Val	Lys	Glu	Pro	Pro
145					150					155					160

Pro	Lys	Leu	Pro	Asn	Gly	Val	Phe	Thr	Pro	Glu	Phe	Gln	Glu	Phe	Val
			165						170					175	

Asn	Lys	Cys	Leu	Ile	Lys	Asn	Pro	Thr	Glu	Arg	Ala	Asp	Leu	Lys	Met
			180					185					190		

Leu	Thr	Asn	His	Ala	Phe	Ile	Lys	Arg	Ser	Glu	Val	Lys	Glu	Ala	Asp
		195					200					205			

Phe Ala Cys Leu Cys Lys Thr Leu Xaa Ala Glu Pro Ser Pro Ala His
 210 215 220

<210> 38
 <211> 228
 <212> PRT
 <213> Homo sapiens

<400> 38
 Gly Glu Ile Ser Ile Cys Met Glu His Met Val Ile Lys Gly Leu Thr
 1 5 10 15
 Tyr Leu Arg Glu Lys His Lys Ile Met His Arg Asp Val Lys Pro Ser
 20 25 30
 Asn Ile Leu Val Asn Ser Arg Gly Glu Ile Lys Leu Cys Asp Phe Gly
 35 40 45
 Val Ser Gly Gln Leu Ile Asp Ser Met Ala Asn Ser Phe Val Gly Thr
 50 55 60
 Arg Ser Tyr Met Ser Pro Glu Arg Leu Gln Gly Thr His Tyr Ser Val
 65 70 75 80
 Gln Ser Asp Ile Trp Ser Met Gly Leu Ser Leu Val Glu Met Ala Val
 85 90 95
 Gly Arg Tyr Pro Ile Pro Pro Pro Asp Ala Lys Glu Leu Glu Leu Met
 100 105 110
 Phe Gly Cys Gln Val Glu Gly Asp Ala Ala Glu Thr Pro Pro Arg Pro
 115 120 125
 Arg Thr Thr Pro Gly Arg Pro Leu Ser Ser Tyr Gly Met Asp Ser Arg
 130 135 140
 Pro Pro Met Ala Ile Phe Gln Leu Leu Asp Tyr Ile Val Asn Glu Pro
 145 150 155 160
 Pro Pro Lys Leu Pro Ser Gly Val Phe Ser Leu Glu Phe Gln Asp Phe
 165 170 175
 Val Asn Lys Cys Leu Ile Lys Asn Pro Ala Glu Arg Ala Asp Leu Lys
 180 185 190
 Gln Leu Met Val His Ala Phe Ile Lys Arg Ser Asp Ala Glu Glu Val
 195 200 205
 Asp Phe Ala Gly Trp Leu Cys Ser Thr Ile Gly Leu Asn Gln Pro Ser
 210 215 220
 Thr Pro Thr His
 225

<210> 39
 <211> 2096
 <212> DNA
 <213> Homo sapiens

<400> 39
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 aattaatgta tcccattaaa aaacctgtga tattttttga aacaagaaag aaagaa 2096

<210> 40
 <211> 100
 <212> PRT
 <213> Homo sapiens

<400> 40
 Pro Pro Cys Ser Cys Ala Arg Ser Leu Cys Ala Leu Gln Val Leu Leu
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 Leu Thr Val Leu Gly Ser Ser Thr Asn Gly Gln Thr Lys Arg Asn Ile
 20 25 30

Gly Lys Ser Val Asp Ser Asp Leu Tyr Thr Glu Leu Arg Cys Val Tyr
 35 40 45
 Val Lys Ser Thr Phe Val Leu His Pro Arg Asn Ile His Asn Leu Glu
 50 55 60
 Leu Val Ser Ala Gly Pro His Cys Ser Lys Asp Glu Glu Lys Ile Cys
 65 70 75 80
 Leu Asp Pro Asp Ala Pro Arg Ile Asn Lys Ile Val Gln Lys Met Leu
 85 90 95
 Lys Val Asp Glu
 100

<210> 41
 <211> 117
 <212> PRT
 <213> Homo sapiens

<400> 41
 Pro Ser Cys Asn Ser Ala Arg Pro Leu His Ala Leu Gln Val Leu Leu
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 20 25 30
 Thr Lys Arg Asn Leu Ala Lys Gly Lys Glu Glu Ser Leu Asp Ser Asp
 35 40 45
 Leu Tyr Ala Glu Leu Arg Cys Met Cys Ile Lys Thr Thr Ser Gly Ile
 50 55 60
 His Pro Lys Asn Ile Gln Ser Leu Glu Val Ile Gly Lys Gly Thr His
 65 70 75 80
 Cys Asn Gln Val Glu Val Ile Ala Thr Leu Lys Asp Gly Arg Lys Ile
 85 90 95
 Cys Leu Asp Pro Asp Ala Pro Arg Ile Lys Lys Ile Val Gln Lys Lys
 100 105 110
 Leu Ala Gly Asp Glu
 115

<210> 42
 <211> 52
 <212> PRT
 <213> Homo sapiens

<400> 42
 Lys Ser Val Asp Ser Asp Leu Tyr Thr Glu Leu Arg Cys Val Tyr Val
 1 5 10 15
 Lys Ser Thr Phe Val Leu His Pro Arg Asn Ile His Asn Leu Glu Leu

20 25 30

Val Ser Ala Gly Pro His Cys Ser Lys Asp Glu Glu Lys Ile Cys Leu
35 40 45

Asp Pro Asp Ala
50

<210> 43
<211> 60
<212> PRT
<213> Homo sapiens

<400> 43
Arg Ala Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu
1 5 10 15

Gln Thr Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val
20 25 30

Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu
35 40 45

Lys Asn Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser
50 55 60

<210> 44
<211> 60
<212> PRT
<213> Homo sapiens

<400> 44
Arg Ala Ala Gly Ala Pro Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu
1 5 10 15

Gln Thr Leu Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Lys Val
20 25 30

Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu
35 40 45

Lys Asn Gly Gln Lys Ala Cys Leu Asn Pro Ala Ser
50 55 60

<210> 45
<211> 53
<212> PRT
<213> Homo sapiens

<400> 45
His Val Glu Leu Arg Cys Leu Cys Leu Asn Thr Val Ser Gly Ile His
1 5 10 15

Pro Ser Asn Ile Gln Ser Leu Glu Val Ile Arg Ala Gly Ala His Cys

20

25

30

Ala Lys Val Glu Val Ile Ala Thr Leu Lys Asn Asp Asp Lys Ile Cys
 35 40 45

Leu Asp Pro Glu Ala
 50

<210> 46

<211> 41100

<212> DNA

<213> Homo sapiens

<220>

<223> GENOMIC DNA

<400> 46

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<211> 85
<212> PRT
<213> Homo sapiens

<400> 47
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20 25 30
Cys Gln Cys Met Arg Thr His Phe Ile Pro Leu His Pro Lys Phe Ile
35 40 45
Lys Glu Leu Arg Ile Ile Gln Val Leu Ser Lys Val Leu Ser Tyr Phe
50 55 60
Ala Ser Val His Val Asp Cys Leu Gly Ala Glu Ser Thr Met Val Asn
65 70 75 80
Arg Thr Ala Lys Lys
85

<210> 48
<211> 91
<212> PRT
<213> Homo sapiens

<400> 48
Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser
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Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu
20 25 30

Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe
35 40 45

Ile Lys Glu Leu Arg Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr
50 55 60

Glu Ile Ile Val Lys Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro
65 70 75 80

Lys Glu Asn Trp Val Gln Arg Val Val Glu Lys
85 90

<210> 49
<211> 85
<212> PRT
<213> Homo sapiens

<400> 49
Met Thr Ser Lys Leu Ala Val Ala Leu Leu Leu Leu Gly Ser Cys Met
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Leu Ser Val Ala Leu Cys Glu Val Pro Ser Ile Ser Thr Val Pro Gln
20 25 30

Cys Gln Cys Met Arg Thr His Phe Ile Pro Leu His Pro Lys Phe Ile
35 40 45

Lys Glu Leu Arg Ile Ile Gln Val Leu Ser Lys Val Leu Ser Tyr Phe
50 55 60

Ala Ser Val His Val Asp Cys Leu Gly Ala Glu Ser Thr Met Val Asn
65 70 75 80

Arg Thr Ala Lys Lys
85

<210> 50
<211> 91
<212> PRT
<213> Homo sapiens

<400> 50
Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser
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Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu
20 25 30

Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe
35 40 45

Ile Lys Glu Leu Arg Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr
50 55 60

Glu Ile Ile Val Lys Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro
65 70 75 80

Lys Glu Asn Trp Val Gln Arg Val Val Glu Lys
85 90

<210> 51
<211> 55
<212> PRT
<213> Homo sapiens

<400> 51
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Leu Ser Val Ala Leu Cys Glu Val Pro Ser Ile Ser Thr Val Pro Gln
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Cys Gln Cys Met Arg Thr His Phe Ile Pro Leu His Pro Lys Phe Ile
35 40 45

Lys Glu Leu Arg Ile Ile Gln
50 55

<210> 52
<211> 58
<212> PRT
<213> Homo sapiens

<400> 52
Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser
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Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu
20 25 30

Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe
35 40 45

Ile Lys Glu Leu Arg Val Ile Glu Ser Gly
50 55

<210> 53
<211> 56
<212> PRT
<213> Homo sapiens

<400> 53
Met Thr Ser Lys Leu Ala Val Ala Phe Leu Ala Val Phe Leu Leu Ser
1 5 10 15

Ala Ala Leu Cys Glu Ala Asp Val Leu Ala Arg Val Ser Ala Glu Leu
20 25 30

Arg Cys Gln Cys Ile Asn Thr His Ser Thr Pro Phe His Pro Lys Phe
35 40 45

Ile Lys Glu Leu Arg Val Ile Glu
50 55

<210> 54

<211> 58

<212> PRT

<213> Homo sapiens

<400> 54

Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser
1 5 10 15

Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu
20 25 30

Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe
35 40 45

Ile Lys Glu Leu Arg Val Ile Glu Ser Gly
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<210> 55

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<212> PRT

<213> Homo sapiens

<400> 55

Met Asn Pro Thr Leu Gly Leu Ala Ile Phe Leu Ala Val Leu Leu Thr
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Val Lys Gly Leu Leu Lys Pro Ser Phe Ser Pro Arg Asn Tyr Lys Ala
20 25 30

Leu Ser Glu Val Gln Gly Trp Lys Gln Arg Met Ala Ala Lys Glu Leu
35 40 45

Ala Arg Gln Asn Met Asp Leu Gly Phe Lys Leu Leu Lys Lys Leu Ala
50 55 60

Phe Tyr Asn Pro Gly Arg Asn Ile Phe Leu Ser Pro Leu Ser Ile Ser
65 70 75 80

Thr Ala Phe Ser Met Leu Cys Leu Gly Ala Gln Asp Ser Thr Leu Asp
85 90 95

Glu Ile Lys Gln Gly Phe Asn Phe Arg Lys Met Pro Glu Lys Asp Leu
100 105 110

His Glu Gly Phe His Tyr Ile Ile His Glu Leu Thr Gln Lys Thr Gln
115 120 125

Asp Leu Lys Leu Ser Ile Gly Asn Thr Leu Phe Ile Asp Gln Arg Leu

<213> Homo sapiens

<400> 56

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Val	Lys	Gly	Leu	Leu	Lys	Pro	Ser	Phe	Ser	Pro	Arg	Asn	Tyr	Lys	Ala
			20					25					30		
Leu	Ser	Glu	Val	Gln	Gly	Trp	Lys	Gln	Arg	Met	Ala	Ala	Lys	Glu	Leu
		35					40					45			
Ala	Arg	Gln	Asn	Met	Asp	Leu	Gly	Phe	Lys	Leu	Leu	Lys	Lys	Leu	Ala
	50					55					60				
Phe	Tyr	Asn	Pro	Gly	Arg	Asn	Ile	Phe	Leu	Ser	Pro	Leu	Ser	Ile	Ser
65					70					75					80
Thr	Ala	Phe	Ser	Met	Leu	Cys	Leu	Gly	Ala	Gln	Asp	Ser	Thr	Leu	Asp
				85					90					95	
Glu	Ile	Lys	Gln	Gly	Phe	Asn	Phe	Arg	Lys	Met	Pro	Glu	Lys	Asp	Leu
			100					105					110		
His	Glu	Gly	Phe	His	Tyr	Ile	Ile	His	Glu	Leu	Thr	Gln	Lys	Thr	Gln
		115					120					125			
Asp	Leu	Lys	Leu	Ser	Ile	Gly	Asn	Thr	Leu	Phe	Ile	Asp	Gln	Arg	Leu
	130					135					140				
Gln	Pro	Gln	Arg	Lys	Phe	Leu	Glu	Asp	Ala	Lys	Asn	Phe	Tyr	Ser	Ala
145					150					155					160
Glu	Thr	Ile	Leu	Thr	Asn	Phe	Gln	Asn	Leu	Glu	Met	Ala	Gln	Lys	Gln
			165						170					175	
Ile	Asn	Asp	Phe	Ile	Ser	Gln	Lys	Thr	His	Gly	Lys	Ile	Asn	Asn	Leu
			180					185					190		
Ile	Glu	Asn	Ile	Asp	Pro	Gly	Thr	Val	Met	Leu	Leu	Ala	Asn	Tyr	Ile
	195						200					205			
Phe	Phe	Arg	Ala	Arg	Trp	Lys	His	Glu	Phe	Asp	Pro	Asn	Val	Thr	Lys
	210					215					220				
Glu	Glu	Asp	Phe	Phe	Leu	Glu	Lys	Asn	Ser	Ser	Val	Lys	Val	Pro	Met
225					230					235					240
Met	Phe	Arg	Ser	Gly	Ile	Tyr	Gln	Val	Gly	Tyr	Asp	Asp	Lys	Leu	Ser
				245					250					255	
Cys	Thr	Ile	Leu	Glu	Ile	Pro	Tyr	Gln	Lys	Asn	Ile	Thr	Ala	Ile	Phe
			260					265					270		
Ile	Leu	Pro	Asp	Glu	Gly	Lys	Leu	Lys	His	Leu	Glu	Lys	Gly	Leu	Gln
		275					280					285			

Val Asp Thr Phe Ser Arg Trp Lys Thr Leu Leu Ser Arg Arg Val Val
 290 295 300
 Asp Val Ser Val Pro Arg Leu His Met Thr Gly Thr Phe Asp Leu Lys
 305 310 315 320
 Lys Thr Leu Ser Tyr Ile Gly Val Ser Lys Ile Phe Glu Glu His Gly
 325 330 335
 Asp Leu Thr Lys Ile Ala Pro His Arg Ser Leu Lys Val Gly Glu Ala
 340 345 350
 Val His Lys Ala Glu Leu Lys Met Asp Glu Arg Gly Thr Glu Gly Ala
 355 360 365
 Ala Gly Thr Gly Ala Gln Thr Leu Pro Met Glu Thr Pro Leu Val Val
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 Ser Val Leu Phe Leu Gly Lys Ile Val Asn Pro Ile Gly Lys
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<210> 57

<211> 361

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> (1)..(361)

<223> Wherein Xaa is any amino acid as defined in the
specification

<400> 57

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 Leu Cys Leu Gly Ala Gln Asp Ser Thr Leu Asp Glu Ile Lys Gln Gly
 35 40 45
 Phe Asn Phe Arg Lys Met Pro Glu Lys Asp Leu His Glu Gly Phe His
 50 55 60
 Tyr Ile Ile His Glu Leu Thr Gln Lys Thr Gln Asp Leu Lys Leu Ser
 65 70 75 80
 Ile Gly Asn Thr Leu Phe Ile Asp Gln Arg Leu Gln Pro Gln Arg Lys
 85 90 95
 Phe Leu Glu Asp Ala Lys Asn Phe Tyr Ser Ala Glu Thr Ile Leu Thr
 100 105 110

Asn Phe Gln Asn Leu Glu Met Ala Gln Lys Gln Ile Asn Asp Phe Ile
 115 120 125
 Ser Gln Lys Thr His Gly Lys Ile Asn Asn Leu Ile Glu Asn Ile Asp
 130 135 140
 Pro Gly Thr Val Met Leu Leu Ala Asn Tyr Ile Phe Phe Arg Ala Arg
 145 150 155 160
 Trp Lys His Glu Phe Asp Pro Asn Val Thr Lys Glu Glu Asp Phe Phe
 165 170 175
 Leu Glu Lys Asn Ser Ser Val Lys Val Pro Met Met Phe Arg Ser Gly
 180 185 190
 Ile Tyr Gln Val Gly Tyr Asp Asp Lys Leu Ser Cys Thr Ile Leu Glu
 195 200 205
 Ile Pro Tyr Gln Lys Asn Ile Thr Ala Ile Phe Ile Leu Pro Asp Glu
 210 215 220
 Gly Lys Leu Lys His Leu Glu Lys Gly Leu Gln Val Asp Thr Phe Ser
 225 230 235 240
 Arg Trp Lys Thr Leu Leu Ser Arg Arg Val Val Asp Val Ser Val Pro
 245 250 255
 Arg Leu His Met Thr Gly Thr Phe Asp Leu Lys Lys Thr Leu Ser Tyr
 260 265 270
 Ile Gly Val Ser Lys Ile Phe Glu Glu His Gly Asp Leu Thr Lys Ile
 275 280 285
 Ala Pro His Arg Ser Leu Lys Val Gly Glu Ala Val His Lys Ala Glu
 290 295 300
 Leu Lys Met Asp Glu Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 305 310 315 320
 Xaa Xaa Leu Pro Met Glu Thr Pro Leu Val Val Lys Ile Asp Lys Pro
 325 330 335
 Tyr Leu Leu Leu Ile Tyr Ser Glu Lys Ile Pro Ser Val Leu Phe Leu
 340 345 350
 Gly Lys Ile Val Asn Pro Ile Gly Lys
 355 360

<210> 58
 <211> 363
 <212> PRT
 <213> Homo sapiens

<400> 58
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Leu Ser Leu Gly Thr Lys Ala Asp Thr Gln Ser Glu Ile Leu Glu Gly	35	40	45
Leu Asn Phe Asn Leu Thr Glu Ile Pro Gln Ala Gln Val His Glu Gly	50	55	60
Phe Gln Glu Leu Leu Arg Thr Leu Asn Lys Pro Asp Ser Gln Leu Gln	65	70	75
Leu Thr Thr Gly Asn Gly Leu Phe Leu Asn Lys Ser Leu Lys Val Val	85	90	95
Asp Lys Phe Leu Glu Asp Val Lys Asn Leu Tyr His Ser Glu Ala Phe	100	105	110
Ser Val Asn Phe Gln Asp Thr Glu Glu Ala Lys Lys Gln Ile Asn Asn	115	120	125
Tyr Val Glu Lys Gly Thr Gln Gly Lys Val Val Asp Leu Val Lys Glu	130	135	140
Leu Asp Arg Asp Thr Val Phe Ala Leu Val Asn Tyr Ile Phe Phe Lys	145	150	155
Gly Lys Trp Glu Arg Pro Phe Glu Val Glu Ala Thr Glu Glu Glu Asp	165	170	175
Phe His Val Asp Gln Ala Thr Thr Val Lys Val Pro Met Met Arg Arg	180	185	190
Leu Gly Met Phe Asn Ile Tyr His Cys Glu Lys Leu Ser Ser Trp Val	195	200	205
Leu Leu Met Lys Tyr Leu Gly Asn Ala Thr Ala Ile Phe Phe Leu Pro	210	215	220
Asp Gln Gly Lys Leu Gln His Leu Glu Asn Glu Leu Thr His Asp Ile	225	230	235
Ile Thr Lys Phe Leu Glu Asn Glu Asn Arg Arg Ser Ala Asn Leu His	245	250	255
Leu Pro Lys Leu Ala Ile Thr Gly Thr Tyr Asp Leu Lys Thr Val Leu	260	265	270
Gly His Leu Gly Ile Thr Lys Val Phe Ser Asn Gly Ala Asp Leu Ser	275	280	285
Gly Val Thr Glu Asp Ala Pro Leu Lys Leu Ser Lys Ala Val His Lys	290	295	300
Ala Val Leu Thr Ile Asp Glu Lys Gly Thr Glu Ala Ala Gly Ala Met			

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 <212> DNA
 <213> Homo sapiens

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 <213> Homo sapiens

<400> 62					
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gggcacacat	tactcgggtg	agtcggacat	ctggagcatg	ggcctgtccc	tgggtggagct 780
ggcgcctcga	aggtacccca	tcccccgcc	cgacgccaac	gagctggagg	ccatctttgg 840
gcggcccgtg	gtcgacgggg	aagaaggaga	gcctcacagc	atctcgccctc	ggccgaggcc 900


```

gcccgggcgc cccgtcagcg gtcacgggat ggatagccgg cctgccatgg ccattcttga 960
gctcctggac tatattgtga acgagccacc tcctaagctg cccaacggtg tggtcaccac 1020
ggacttccag gagtttgtca ataaatgcct catcaagaac ccagcggagc gggcggacct 1080
gaagatgctc a 1091

```

```

<210> 63
<211> 363
<212> PRT
<213> Homo sapiens

```

```

<220>
<221> VARIANT
<222> (1)..(363)
<223> Wherein Xaa is any amino acid as defined in the
specification

```

```

<400> 63
Met Leu Ala Arg Arg Lys Pro Met Leu Pro Ala Leu Thr Ile Asn Pro
  1             5             10             15

Thr Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala
      20             25             30

Asn Leu Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      35             40             45

Xaa Xaa Xaa Xaa Xaa Xaa Ala Phe Leu Thr Gln Lys Ala Lys Val Gly
      50             55             60

Glu Leu Lys Asp Asp Asp Phe Glu Arg Thr Ser Glu Leu Asp Ala Gly
      65             70             75             80

Asn Gly Gly Val Val Thr Lys Val Gln His Arg Pro Ser Gly Leu Ile
      85             90             95

Met Ala Arg Lys Leu Ile His Leu Glu Ile Lys Pro Ala Ile Arg Asn
      100            105            110

Gln Ile Ile Arg Glu His Gln Val Leu His Glu Cys Asn Ser Pro Tyr
      115            120            125

Ile Val Gly Phe Tyr Gly Ala Phe Tyr Cys Asp Arg Glu Ile Ser Ile
      130            135            140

Cys Met Glu His Met Asp Gly Gly Ser Leu Asp Gln Gly Leu Lys Glu
      145            150            155            160

Ala Lys Arg Ile Pro Glu Asp Ile Leu Gly Lys Val Ser Ile Ala Val
      165            170            175

Leu Arg Gly Leu Ala Tyr Leu Arg Glu Lys His Gln Ile Met His Arg
      180            185            190

Asn Val Lys Pro Ser Asn Ile Leu Val Asn Ser Arg Gly Glu Ile Lys
      195            200            205

```

Leu Cys Asp Phe Gly Val Ser Gly Gln Leu Ile Asp Ser Met Ala Asn
 210 215 220
 Ser Phe Val Gly Thr Arg Ser Tyr Met Ala Pro Glu Arg Leu Gln Gly
 225 230 235 240
 Thr His Tyr Ser Val Gln Ser Val Ile Trp Ser Met Asp Leu Ser Leu
 245 250 255
 Val Glu Leu Ala Ile Glu Arg Tyr Pro Ile Pro Pro Pro Asp Ala Lys
 260 265 270
 Glu Leu Glu Ala Ile Phe Gly Gln Pro Val Val Asp Arg Glu Glu Gly
 275 280 285
 Glu Pro His Ser Ile Ser Ser Trp Pro Gly Ser Pro Gly Arg Pro Asn
 290 295 300
 Ser Gly Tyr Gly Met Asp Ser Leu Pro Ala Met Ala Ile Phe Glu Leu
 305 310 315 320
 Leu Asp Tyr Ile Val Lys Glu Pro Pro Pro Lys Leu Pro Asn Gly Val
 325 330 335
 Phe Thr Pro Asp Phe Gln Glu Phe Val Asn Lys Cys Leu Ile Lys Asn
 340 345 350
 Pro Thr Glu Arg Ala Asp Leu Lys Met Leu Ser
 355 360

<210> 64
 <211> 364
 <212> PRT
 <213> Homo sapiens

<400> 64
 Met Leu Ala Arg Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro
 1 5 10 15
 Thr Ile Ala Glu Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala
 20 25 30
 Asn Leu Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu
 35 40 45
 Gln Gln Lys Lys Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val
 50 55 60
 Gly Glu Leu Lys Asp Asp Asp Phe Glu Arg Ile Ser Glu Leu Gly Ala
 65 70 75 80
 Gly Asn Gly Gly Val Val Thr Lys Val Gln His Arg Pro Ser Gly Leu
 85 90 95
 Ile Met Ala Arg Lys Leu Ile His Leu Glu Ile Lys Pro Ala Ile Arg
 100 105 110

Asn	Gln	Ile	Ile	Arg	Glu	Leu	Gln	Val	Leu	His	Glu	Cys	Asn	Ser	Pro	115	120	125
Tyr	Ile	Val	Gly	Phe	Tyr	Gly	Ala	Phe	Tyr	Ser	Asp	Gly	Glu	Ile	Ser	130	135	140
Ile	Cys	Met	Glu	His	Met	Asp	Gly	Gly	Ser	Leu	Asp	Gln	Val	Leu	Lys	145	150	155
Glu	Ala	Lys	Arg	Ile	Pro	Glu	Glu	Ile	Leu	Gly	Lys	Val	Ser	Ile	Ala	165	170	175
Val	Leu	Arg	Gly	Leu	Ala	Tyr	Leu	Arg	Glu	Lys	His	Gln	Ile	Met	His	180	185	190
Arg	Asp	Val	Lys	Pro	Ser	Asn	Ile	Leu	Val	Asn	Ser	Arg	Gly	Glu	Ile	195	200	205
Lys	Leu	Cys	Asp	Phe	Gly	Val	Ser	Gly	Gln	Leu	Ile	Asp	Ser	Met	Ala	210	215	220
Asn	Ser	Phe	Val	Gly	Thr	Arg	Ser	Tyr	Met	Ala	Pro	Glu	Arg	Leu	Gln	225	230	235
Gly	Thr	His	Tyr	Ser	Val	Gln	Ser	Asp	Ile	Trp	Ser	Met	Gly	Leu	Ser	245	250	255
Leu	Val	Glu	Leu	Ala	Val	Gly	Arg	Tyr	Pro	Ile	Pro	Pro	Pro	Asp	Ala	260	265	270
Lys	Glu	Leu	Glu	Ala	Ile	Phe	Gly	Arg	Pro	Val	Val	Asp	Gly	Glu	Glu	275	280	285
Gly	Glu	Pro	His	Ser	Ile	Ser	Pro	Arg	Pro	Arg	Pro	Pro	Gly	Arg	Pro	290	295	300
Val	Ser	Gly	His	Gly	Met	Asp	Ser	Arg	Pro	Ala	Met	Ala	Ile	Phe	Glu	305	310	315
Leu	Leu	Asp	Tyr	Ile	Val	Asn	Glu	Pro	Pro	Pro	Lys	Leu	Pro	Asn	Gly	325	330	335
Val	Phe	Thr	Pro	Asp	Phe	Gln	Glu	Phe	Val	Asn	Lys	Cys	Leu	Ile	Lys	340	345	350
Asn	Pro	Ala	Glu	Arg	Ala	Asp	Leu	Lys	Met	Leu	Thr					355	360	

<210> 65

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR PRIMER

<400> 65
 cagagcaaag aagtttcttg ga 22

<210> 66
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PROBE
 PRIMER

<400> 66
 tgaaacagca ctacttaagt ccaagtcga 29

<210> 67
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PRIMER

<400> 67
 tctcatgagg acatcacatt tg 22

<210> 68
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PRIMER

<400> 68
 agatggcatc ctctctgaag ,at 22

<210> 69
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PROBE
 PRIMER

<400> 69
 cctgctttgc attctttgca ggct 24

<210> 70
 <211> 22

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 70
 aacgtccttg ctgtgtacaa gt 22

 <210> 71
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 71
 aaagtcagca ttgcggttct c 21

 <210> 72
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PROBE
 PRIMER

 <400> 72
 cttggcgtac ctccgagaga agcacc 26

 <210> 73
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 73
 gcttcacatt tcggtgcatg 20

 <210> 74
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 74
 gctggaggag ctggaactt 19

<210> 75
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR PROBE
PRIMER

<400> 75
aagcctttct caccagaaa gccaaag

26

<210> 76
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR PRIMER

<400> 76
tttcgaagtc atcgtctttg a

21

<210> 77
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR PRIMER

<400> 77
catgagggct tccattacat ca

22

<210> 78
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR PROBE
PRIMER

<400> 78
agctgacca gaagaccag gacctc

26

<210> 79
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PRIMER

<400> 79
 gcgtgttccc aatgctcagt 20

<210> 80
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PRIMER

<400> 80
 ggaaagtcag cattgcggtt 20

<210> 81
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PROBE
 PRIMER

<400> 81
 cttggcgtac ctccgagaga agcacc 26

<210> 82
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PRIMER

<400> 82
 ttcacatttc ggtgcatgat c 21

<210> 83
 <211> 66
 <212> PRT
 <213> Homo sapiens

<400> 83
 Arg Lys Pro Met Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
 1 5 10 15
 Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn Leu Val Asp
 20 25 30
 Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Lys Arg

35 40 45
 Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys Asp
 50 55 60

Asp Asp
 65

<210> 84
 <211> 66
 <212> PRT
 <213> *Cricetulus griseus*

<400> 84
 Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Thr Pro Asp Gly
 1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
 20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Glu Glu Gln Gln Arg Asn Arg
 35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
 50 55 60

Asp Asp
 65

<210> 85
 <211> 66
 <212> PRT
 <213> *Homo sapiens*

<400> 85
 Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
 1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
 20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
 35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
 50 55 60

Asp Asp
 65

<210> 86
 <211> 66
 <212> PRT
 <213> *Mus musculus*

<400> 86

Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 87

<211> 66

<212> PRT

<213> *Oryctolagus cuniculus*

<400> 87

Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 88

<211> 66

<212> PRT

<213> *Rattus norvegicus*

<400> 88

Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 89
<211> 66
<212> PRT
<213> *Xenopus laevis*

<400> 89
Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Asn Pro Glu Gly
1 5 10 15
Thr Ala Val Asn Gly Thr Pro Thr Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30
Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45
Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 90
<211> 66
<212> PRT
<213> *Cyprinus carpio*

<400> 90
Pro Lys Arg Arg Pro Val Pro Leu Ile Ile Ala Pro Thr Gly Glu Gly
1 5 10 15
Gln Ser Thr Asn Ile Asp Ala Ala Ser Glu Ala Asn Leu Glu Ala Leu
20 25 30
Gln Arg Lys Leu Gly Glu Leu Asp Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45
Leu Glu Ala Phe Leu Thr Gln Lys Ala Gln Val Gly Glu Leu Lys Asp
50 55 60

Glu Asp
65

<210> 91
<211> 69
<212> PRT
<213> *Gallus gallus*

<400> 91
Met Pro Ala Lys Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Thr Pro
1 5 10 15

Ser Pro Ala Glu Gly Pro Gly Pro Gly Gly Ser Ala Glu Ala Asn Leu
20 25 30

Val Asp Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln
35 40 45

Lys Lys Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu
50 55 60

Leu Lys Asp Asp Asp
65

<210> 92

<211> 67

<212> PRT

<213> Homo sapiens

<400> 92

Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
1 5 10 15

Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn Leu Val Asp
20 25 30

Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Lys Lys
35 40 45

Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys
50 55 60

Asp Asp Asp
65

<210> 93

<211> 67

<212> PRT

<213> Mus musculus

<400> 93

Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
1 5 10 15

Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn Leu Val Asp
20 25 30

Leu Gln Lys Lys Leu Glu Glu Leu Asp Leu Asp Glu Gln Gln Arg Lys
35 40 45

Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys
50 55 60

Asp Asp Asp
65

<210> 94
 <211> 67
 <212> PRT
 <213> Rattus norvegicus

<400> 94
 Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
 1 5 10 15
 Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala His Leu Val Asp
 20 25 30
 Leu Gln Lys Lys Leu Glu Glu Leu Asp Leu Asp Glu Gln Gln Arg Lys
 35 40 45
 Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys
 50 55 60
 Asp Asp Asp
 65

<210> 95
 <211> 66
 <212> PRT
 <213> Homo sapiens

<400> 95
 Arg Lys Pro Met Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
 1 5 10 15
 Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn Leu Val Asp
 20 25 30
 Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Lys Arg
 35 40 45
 Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys Asp
 50 55 60
 Asp Asp
 65

<210> 96
 <211> 66
 <212> PRT
 <213> Cricetulus griseus

<400> 96
 Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Thr Pro Asp Gly
 1 5 10 15
 Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
 20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Glu Glu Gln Gln Arg Asn Arg
35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 97
<211> 66
<212> PRT
<213> Homo sapiens

<400> 97
Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 98
<211> 66
<212> PRT
<213> Mus musculus

<400> 98
Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15

Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30

Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45

Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60

Asp Asp
65

<210> 99
<211> 66
<212> PRT

<213> *Oryctolagus cuniculus*

<400> 99

Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15
Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30
Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45
Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60
Asp Asp
65

<210> 100

<211> 66

<212> PRT

<213> *Rattus norvegicus*

<400> 100

Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Ala Pro Asp Gly
1 5 10 15
Ser Ala Val Asn Gly Thr Ser Ser Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30
Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45
Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp
50 55 60
Asp Asp
65

<210> 101

<211> 66

<212> PRT

<213> *Xenopus laevis*

<400> 101

Pro Lys Lys Lys Pro Thr Pro Ile Gln Leu Asn Pro Asn Pro Glu Gly
1 5 10 15
Thr Ala Val Asn Gly Thr Pro Thr Ala Glu Thr Asn Leu Glu Ala Leu
20 25 30
Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Arg Lys Arg
35 40 45
Leu Glu Ala Phe Leu Thr Gln Lys Gln Lys Val Gly Glu Leu Lys Asp

1 5 10 15
 Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn Leu Val Asp
 20 25 30
 Leu Gln Lys Lys Leu Glu Glu Leu Glu Leu Asp Glu Gln Gln Lys Lys
 35 40 45
 Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys
 50 55 60
 Asp Asp Asp
 65

<210> 105
 <211> 67
 <212> PRT
 <213> Mus musculus

<400> 105
 Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
 1 5 10 15
 Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala Asn Leu Val Asp
 20 25 30
 Leu Gln Lys Lys Leu Glu Glu Leu Asp Leu Asp Glu Gln Gln Arg Lys
 35 40 45
 Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys
 50 55 60
 Asp Asp Asp
 65

<210> 106
 <211> 67
 <212> PRT
 <213> Rattus norvegicus

<400> 106
 Arg Lys Pro Val Leu Pro Ala Leu Thr Ile Asn Pro Thr Ile Ala Glu
 1 5 10 15
 Gly Pro Ser Pro Thr Ser Glu Gly Ala Ser Glu Ala His Leu Val Asp
 20 25 30
 Leu Gln Lys Lys Leu Glu Glu Leu Asp Leu Asp Glu Gln Gln Arg Lys
 35 40 45
 Arg Leu Glu Ala Phe Leu Thr Gln Lys Ala Lys Val Gly Glu Leu Lys
 50 55 60
 Asp Asp Asp
 65

<210> 107
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 107
 ggatcccttc taaagccgag cttctcacca agg 33

 <210> 108
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 108
 ctcgagtttt ccaatagggt taacaatctt tcccagg 37

 <210> 109
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: SEQUENCING
 PRIMER

 <400> 109
 tacatcatcc acgagctgac c 21

 <210> 110
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: SEQUENCING
 PRIMER

 <400> 110
 ggtcagctcg tggatgatc 19

 <210> 111
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SEQUENCING
 PRIMER

<400> 111
 agttcagtca aggtgccc 18

<210> 112
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SEQUENCING
 PRIMER

<400> 112
 gggcaccttg actgaactg 19

<210> 113
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SEQUENCING
 PRIMER

<400> 113
 catggtgatc tcaccaagat cg 22

<210> 114
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: SEQUENCING
 PRIMER

<400> 114
 cgatcttggt gagatcacca tg 22

<210> 115
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR PRIMER

<400> 115
 ctgcctcg agggtaagcc tatccctaac 30

<210> 116
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 116
 ctcgtcgggc ccctgatcag cgggtttaa c 31

 <210> 117
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 117
 ggatccaaag aagtttcttg gagagaattc atg 33

 <210> 118
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR PRIMER

 <400> 118
 ctcgaggttg ccgataggtt ctaccatc 28